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HEALTH AND SAFETY COMMISSION

Update on HSE action on work related cancer

A Paper by Geoff Lloyd

Advisor(s): Dave Dillon and Kevin Walkin

Cleared by Jonathan Rees on 26 November 2007

Issue

1. To inform the Commission of the results of the first phase of research to update HSE's estimates of the occupational cancer burden in GB and provide information on HSE's current and future work to reduce the risk of workplace exposure to carcinogens.

Timing

2. For discussion on 11 December.

Recommendation

3. To note:

- the results of the first phase of the research and the current work in which HSE is involved on occupational cancer;
- the work HSE is doing to consider, with stakeholders, the results of the research and its implications for future work on occupational cancer;

Background

4. At the meeting on 9 October 2007 (see MISC/07/30), the Commission asked for a further paper on this subject to be considered. This paper provides some extra detail of the results of research to update HSE's estimates of the burden of occupational cancer. The research was made available on HSE's website on 31 October 2007 and can be found at <http://www.hse.gov.uk/research/rrhtm/rr595.htm>.

5. HSE's current assessment derives from reports by Professors Doll and Peto to the US Congress in 1981 which was based on the scientific evidence of occupational cancer risks at that time. It estimates that around 4% of cancer deaths in GB are due to occupational causes (with an uncertainty range of 2% to 8%). This estimate gives around 6,000 cancer deaths each year due to occupational causes (uncertainty range of 3,000 to 12,000). HSE acknowledges that the Doll and Peto estimates are dated and its most recent statistical release includes revisions to the numbers based on the overall numbers of deaths and new cases of cancer in national data sets. It also includes updated information on six key cancers from recent research (<http://www.hse.gov.uk/statistics/causdis/cancer/index.htm>).

6. HSE commissioned research in 2001 to up-date its statistics on the burden and to obtain a prediction of the future burden in the light of current industrial practice. The research is being done in two phases. The first phase has concentrated on the 6 cancers most associated with workplaces (mesothelioma, lung, bladder, nose and nasal cavities, non-melanoma skin and leukaemia). These cancers were identified at a stakeholder workshop held in 2003 and attended by experts who concurred with the methodology to use for the analysis of the data. The second phase of the work will estimate the occupational burden for the other cancers associated with workplaces to allow an overall estimate of the burden to be established. It will also develop a methodology for predicting future estimates and make such estimates.

Argument

Results of HSE's research

7. The results from the first phase indicate that the proportion of cancer deaths in 2004 attributable to occupation was estimated to be 4.9%. The estimated numbers of deaths were 7,317. These estimates cover both "established" carcinogens (where evidence of a link with cancer in humans is strong) and "uncertain" carcinogens (where evidence is suggestive). These results suggest that the estimated burden will be higher than the 1981 estimate once the second phase of the research is complete. But much of the increase is due to asbestos-related cancers which are known to have a long latency and which HSE has been tackling for many years. Further details of the results broken down by sex and by each of the 6 cancers are set out in Annex 1. This also shows the estimated number (and proportion) of people registered as having one of these cancers and whose cancer can be attributed to occupational exposure. The figures for registrations are larger than those for deaths because some registered cancers do not result in death.

Current work to reduce the risk of workplace exposure to carcinogens

8. HSE is already aware of the risks carcinogens pose and has continuously been working with industry to reduce exposures to them. The results from the first phase of the above research (plus HSE's hygiene and toxicological evidence) were shared with stakeholders at a workshop on 25/26 June 2007. The aim of the workshop was to discuss the current evidence base, seek a shared understanding on the development of future interventions for occupational cancer and to gather stakeholders' recommendations for prioritising interventions. Those attending included members of HSC (Hugh Robertson and Sayeed Khan), national and international experts; academics in epidemiological work; campaigning groups; and trade associations.

Since the workshop, HSE has initiated further work to address some of the gaps identified (e.g. the potential for exposure in the plastics processing and handling industries). A further stakeholder meeting is planned next Spring.

9. MISC/07/30 contains details of other work being carried out by HSE on occupational cancer, but examples include:

- a. a detailed profiling exercise for over 130 known or probable carcinogenic chemicals or processes;
- b. Initiatives (including inspection activity) to improve the design and maintenance of engineering controls (eg local exhaust ventilation);
- c. The introduction of new asbestos regulations in 2006 which set a single, lower control limit on work with asbestos; a pilot campaign (to be launched

on mesothelioma day – 27 February 2008) aimed at building maintenance and repair workers; and an evaluation of the duty to manage asbestos – a key deliverable in the HSC Business Plan for 2007/8;

- d. Enforcement activity following the introduction of a lower workplace exposure limit for respirable crystalline silica (this year's focus is brick-making) and working in partnership with construction sector stakeholders to reduce the risk of respiratory disease as a result of cutting kerbs, paving etc;

Consultation

10. Work to update HSE's estimate of the burden of occupational cancer has involved many experts at all stages (including key workshops in 2003, 2006 and 2007 – see also paragraph 9). The cancer, asbestos and silica projects have been, and continue to be, developed in conjunction with a wide range of stakeholders.

Presentation

11. HSE regards the research into the occupational cancer burden to be one of the most comprehensive pieces of work done in this area. It is investing considerable resources in ensuring that the research is done properly and is confident that the results now emerging are robust. There were two media enquiries made in reaction to publication of the first phase results: from the Occupational Health Review and Hazards Magazine. HSC should note that HSE's work on occupational cancer has been criticised by Hazards Campaign and Professor Watterson (Stirling University). The latter published an article in November giving higher estimates for the overall occupational cancer burden (at their upper end, from 24-40,000 deaths per year) than those presented in HSE's statistical reports. No information was presented on how these figures had been derived and they have declined to provide this to HSE. The article also criticised HSE activity on occupational cancer more generally. The criticisms were aired more widely in the BBC File on 4 programme in November 2007.

12. We anticipate the results of the second phase of the research will report in November 2009. Handling arrangements will be decided on nearer the time but are likely to be similar to those for the first phase: on publication: issue of a news release to specialist trade media reiterating HSE work and messages on occupational cancer plus reactive handling of any resulting issues.

Costs and Benefits

13. This work does not have direct costs for external stakeholders because the purpose is to update the status of the current cancer burden. Its publication will raise the profile of occupational cancer and we could expect pressure from employers, trade unions and other employee/pressure groups to improve the standard of control.

Financial/Resource Implications for HSE

14. The cost of the first phase of the research to up-date estimates of the occupational burden of cancer in GB was £332K. Arrangements for the second phase of this research are likely to cost in the region of £820K. The stakeholder workshop referred to in paragraph 10 cost £14K. Costs of the activities listed in paragraph 11 include £285K for the profiling exercise and £400K for the asbestos campaign. The research being carried

out as part of the evaluation of the duty to manage will cost £327K; and this year's enforcement activity on controlling exposure to RCS from brick-making will cost £50K.

Environmental and Other Implications

15. N/A

Action

16. See paragraph 3

Annex 1

Summary of results from first phase of research estimating current burden of occupational cancer

Summary data for six major cancer sites of the estimated attributable fraction(s) and cancer deaths for ' <u>established</u> carcinogens plus <u>uncertain</u> carcinogens (IARC Group 1 and 2A, <u>strong</u> and <u>suggestive</u> human evidence)							
Cancer site:	Attributable Fraction			Attributable Deaths		Attributable Registrations	
	Male	Female	Total (based on deaths)	Male	Female	Male	Female
Lung	21.6%	5.5%	15.0%	4,106	728	4,594	826
Mesothelioma	98% *	90% *	97%*	1,650	270	1,650 #	270 #
Bladder	11.6%	2.0%	8.3%	362	32	816	57
Leukaemia	2.7%	0.8%	1.7%	58	11	93	15
Sino-nasal	64.3%	18.4%	43.3%	45	11	140	31
NMSC	11.8%	3.0%	8.4%	38	6	3,992	855
Total				6259	1058	11284	2054
Combined total				7317		13338	
Total all cancers in GB				78,237	71,666	167,506	164,586
AFs for six cancers combined			4.9%	8.0%	1.5%	6.7%	1.2%

Summary data for six major cancer sites of the estimated attributable fraction(s) and cancer deaths for ' <u>established</u> carcinogens only' (IARC Group 1 and 2A, for which the evidence of human carcinogenicity is <u>strong</u>)							
Cancer site:	Attributable Fraction			Attributable Deaths		Attributable Registrations	
	Male	Female	Total (based on deaths)	Male	Female	Male	Female
Lung	16.5%	4.5%	11.6%	3,137	599	3,509	680
Mesothelioma	85-90%	20-30%	74-80%	1,450	75	1,450 #	75 #
Bladder	1.3%	0.6%	1.0%	40	10	89	17
NMSC	11.8%	3.0%	8.4%	38	6	3,992	855
Sino-nasal	34.1%	10.8%	23.4%	24	6	74	18
Leukaemia	0.3%	0.5%	0.2%	4	5	5	6
AFs for six cancers combined				6.0%	1.0%	5.4%	1.0%

Notes:

The research used a measure of the burden of occupational cancer called the "attributable fraction". The attributable fraction for a specific kind of cancer in relation to a particular occupational exposure is the proportion by which the incidence rate of the cancer in the general population would be reduced if the exposure had not occurred. It is estimated from research studies that measure the extent to which rates of cancers in workers who have been exposed occupationally are higher than cancer rates in the general population. The "attributable fraction" is used to estimate "attributable number" of cases of cancer in the general population that would have been prevented in a particular year had the occupational exposure not occurred. The attributable number may be presented as number of deaths ("attributable deaths") or number of newly registered cases of cancer in the national cancer registration system ("attributable registrations"). The distinction is made because not all cancers are fatal. The *total* estimated burden of work-related cancer is derived from the attributable fractions for *specific* cancers and *specific* work exposures.

*Includes cases described as due to para-occupational or environmental exposure to asbestos.

Taken as equal to attributable deaths for this short survival cancer.